

REMARKS**1. Request for Continued Examination:**

5 The applicant requests continued examination of the above-indicated application as per 37 CFR 1.114.

2. Rejection of claims 1-5, 8-9, 11-16 under 35 U.S.C. 103(a)
as being unpatentable over Sato (US 5,349,239) in view of
10 Li (US 5,696,466):

Claims 1-5, 8-9, 11, and 12 are cancelled without prejudice or disclaimer to the merits thereof.

15 Claims 13 is amended to recite "an emitter including an enlarged portion located laterally away from the collector and the base". Such amendment is fully supported by the disclosure, and by claims 21 and 23. No new matter is entered by this amendment.

20 In the previous Office action reply the applicant clearly stated what "laterally away" was meant to convey. To reiterate, "laterally away" is meant to convey "removed from in a sideways direction" wherein the sideways direction is in the plane of
25 the substrate. Neither Sato nor Li teach or suggest this. Please see Items 3 and 4 below for more detailed arguments. In addition, since claim 13 is simply a method for manufacturing the devices of claims 21-26, this amendment should not warrant an additional search or new grounds for
30 rejection.

Reconsideration of claims 13-16 is requested. Claims 14-16

are dependent on claim 13 and should be allowed if claim 13 is allowed.

3. Rejection of claims 1, 6-7, 10, 13, and 17-20 under 35 U.S.C. 103(a) as being unpatentable over Shirakawa (EP 1 077 494) in view of Li (US 5,696,466):

Claims 1, 6-7, 10, and 17-20 are cancelled without prejudice or disclaimer to the merits thereof.

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Reconsideration of claim 13 is requested in view of the arguments made in Items 1, 3, and 4.

4. Rejection of claims 21-22 and 25 under 35 U.S.C. 103(a) as being unpatentable over Sato (US 5,349,239) in view of Li (US 5,696,466):

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Claim 21 recites "the emitter including an enlarged portion located laterally away from the collector and the base".

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The applicant contends that the examiner has not demonstrated that either Sato or Li provide this limitation nor that it is obvious. If the examiner means to say that this limitation is taught or suggested by the cited art, the applicant requests that the examiner provide an explanation.

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In Sato, the emitter layer 5 is divided into four short strip-shaped finger portions 5a arranged in parallel, however, these short strip shaped finger portions 5a are located above or below the collector 8 (see Figs. 1-3). That is, Sato's finger portions 5a are not located laterally away from the collector 8, the plain meaning of "laterally away" being taken as

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“removed from in a sideways direction” in the plane of the substrate 10. The plan view of Fig.1 of Sato shows clearly that the finger portions 5a are not located laterally away from the collector 8. In Li’s Fig.5, the emitter appears to
5 be below the collector rather than beside it. As such, the combination of Sato and Li does not teach or fairly suggest this limitation.

In contrast, please consider the applicant’s enlarged and
10 clearly wholly laterally removed emitter 14b shown in Figs.1-5, which the recited limitation “laterally away” sufficiently describes. This limitation is significant because it allows the enlarged emitter to readily dissipate large amounts of heat.

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Reconsideration of claims 21-22 and 25 is requested in view of the above argument. Claims 22 and 25 are dependent on claim 21 and should be allowed if claim 21 is allowed.

20 5. Rejection of claims 23-24 and 26 under 35 U.S.C. 103(a) as being unpatentable over Shirakawa (EP 1 077 494) in view of Sato (US 5,349,239):

Claim 23 recites “the emitter including an enlarged portion
25 located laterally away from the collector and the base”.

Again, the applicant contends that the examiner has not demonstrated that either Shirakawa or Sato provide this limitation nor that it is obvious. If the examiner means to
30 say that this limitation is taught or suggested by the cited art, the applicant requests that the examiner provide an explanation.

Shirakawa teaches symmetrical devices in which the emitter
1 is basically above, but not laterally away from, the
collector 3 and the base 2. The examiner has referred to Fig. 1B,
5 however, the corresponding plan view of Fig. 1A clearly shows
that the center of the emitter 1, base 2, and collector 3 are
coincident. The other embodiments of Shirakawa also teach such
symmetry. Such symmetrical stacked arrangement is clearly not
"laterally away". Please see the argument in Item 3 above
10 regarding why Sato does not teach or suggest this limitation.
As such, the combination of Shirakawa and Sato does not teach
or fairly suggest the "laterally away" limitation.

Again, this limitation is significant because it allows
15 the enlarged emitter to readily dissipate large amounts of
heat.

Reconsideration of claims 23-24 and 26 is requested in view
of the above argument. Claims 24 and 26 are dependent on claim
20 23 and should be allowed if claim 23 is allowed.

6. New Claims 27-38:

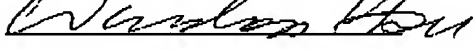
Claims 27-38 are introduced. Claim 27 is independent. New
25 limitations of claim 27 are supported by Figs. 3 and 5 and the
corresponding sections of the disclosure, for example. Claims
28-38 correspond to the cancelled claims 2-11. No new matter
is entered by these claims.

30 Claim 27 recites the enlarged portion of the emitter and
its laterally removed location in a manner different from the
other claims. Sato, Li, Shirakawa, and combinations thereof

do not teach or fairly suggest the claim 27 limitation of "in the plane of the substrate, the area of the enlarged portion of the emitter is greater than the area of the emitter electrode, and the enlarged portion of the emitter has a center of area
5 located laterally away from the collector and the base by at least half a major dimension of the emitter electrode" which is one reason why the applicant's invention has high heat dissipation compared to the prior art.

10 Consideration of new claims 27-38 is requested.

Sincerely,

15  Date: 6/18/2004
Winston Hsu, Patent Agent No. 41,526
P.O. BOX 506
Merrifield, VA 22116
U.S.A.

20 e-mail : winstonhsu@naipo.com.tw
(Please contact me by e-mail if you need a telephone communication and I will return your call promptly.)